



**Broadlands Water Booster Pumping Station
Phase III Upgrade
Project ID Number 2007-0164
RFQ 2011-018-200**

ADDENDUM 1

**BIDDER'S MUST ACKNOWLEDGE RECEIPT OF THIS ADDENDUM
WITH YOUR QUOTE SUBMISSION**

Addendum Issued: January 26, 2012

ADDENDUM NO. 1

Addendum Issued: January 26, 2012

Quotes are due by 3:00 pm on February 2, 2012. All Questions are Due by 11:59 pm on January 26, 2012. This solicitation is informal; the Quotes will not be read aloud, and will not be publicly announced. The Contract, if awarded, will be to the lowest responsive, responsible Bidder.

PROJECT: Broadlands Water Booster Pumping Station Phase III Upgrade
Project ID Number 2007-0164
RFQ 2011-018-200

OWNER: Loudoun Water
44865 Loudoun Water Way
Ashburn, VA 20147

ENGINEER: Hazen and Sawyer
1 South Street, Suite 1150
Baltimore, MD 21202

PURPOSE: This Addendum supplements, modifies, deletes from, or adds to the original Request for Quote (RFQ) noted above and all of the requirements of the addendum are herein made a part of the RFQ and any resulting contract documents.

Bidders shall acknowledge receipt of this addendum in the appropriate space on the Quote Form.

PART 1 – QUESTION AND ANSWERS

The following list of questions has been recorded to date. Respective clarifications are listed below the question in bold italics.

General Questions

Question 1: Drawing Sheet no. 2 of 7 is missing in the file we downloaded off of the Loudoun Water site. Please provide this missing sheet.

See Attachment #4, Sheet No. 2. M2 - is provided for reference purposes only as no work is shown on this sheet.

Question 2: The contract duration is set at 120 days. If submittals on the VFD's and pumping equipment are required, coupled with manufacturer's fabrication and delivery time, 120 days does not provide enough time for installation and testing. Please consider revising the contract duration to accommodate the specified manufacturer's delivery time.

See Part 2 for time extension to 150 days.



Question 3: The drawings provided have bold black lines depicting the suction and discharge piping as well as electrical work. The drawings also show light black lines for existing items. There are clouded notes in red and details in red. Please confirm that this RFQ only requires the work detailed on the drawings “in red”.

Yes, work items are indicated in red on the Contract Drawings. They are also listed in the RFQ, under Contractor Documents, item 6.

Question 4: Please provide a dimensional drawing of the existing pumps.

Shop drawing of existing pump provided. See Attachment #5.

Drawing E1

Question 5: General Electrical Note 6 calls for all new conduits to be PVC coated RGS. The existing conduits in this area are not PVC coated RGS. Is this requirement to remain applicable to this Phase III work?

No, see Addendum No.1, Part 2 for revised materials.

Question 6: Maintenance of Facility Operation requires one pump to be operational at all times. Is this to be interpreted as a requirement to provide generator power during the modifications necessary to install the manual transfer switch? Or is there a window of time that the facility can be down for this changeover, based on water demands and storage capacity?

Contractor shall coordinate a maximum of two (2) - four (4) hour outages with Loudoun Water Operations Staff to allow for the installation of the manual transfer switch. Outages shall be coordinated to eliminate outage times during peak water usage.

Should additional outage time be required, the Contractor shall install the generator receptacle and the manual transfer switch and power the station from a generator. Loudoun Water will provide a generator for this use. The generator can only be operated for 5 consecutive days Monday – Friday.

Drawing E2

Question 7: There is a plan notation to provide 4' x 8' x 1/4" steel backboard at the locations for the manual transfer switch and VFDs. The VFDs are replacing existing starters which are presently mounted on channel and appear to be adequate for the VFDs. Is it necessary to replace this channel with steel backboard? (Other backboards in the area are 3/4" plywood).

Plywood is not acceptable; Loudoun Water will only accept steel or aluminum backboards. See Attachment #3 - equipment rack.

Question 8: Can the VFD and manual transfer switch equipment racks be free standing instead of wall mounted?

Yes, see Attachment #3.

Question 9: Note 13 calls for providing 1769-OF4 and 1769-IF8 modules for 4-20mA signals to and from the VFDs. Are these modules in the VFDs or are the modules to be installed in the



existing RTU/PLC? If this refers to the RTU/PLC, is this to be included under Drawing E1, Note 14, by the owner?

The Contactor shall provide and install the 1769-OF4 and 1769-IF8 modules into the existing PLC in the Tank RTU. Note 14 states that Loudoun Water will supply the Control Programming, (i.e. software), but will not provide the equipment, (i.e. hardware).

The Contractor is responsible for ensuring the VFDs are wired correctly and that the motors rotate in the proper direction.

Question 10: Is the owner providing all of the Start-Stop, Lead-Lag, Speed Control and Speed Monitoring functions through the existing RTU?

Yes, the Owner will provide all Programming of control & monitoring functions through their existing equipment.

Question 11: Is the Contractor only responsible for providing wiring from the RTU junction box to the VFDs?

The Contractor is responsible for all electrical supply wiring to VFDs and the control wiring from the RTU to the VFD.

Question 12: Will the Owner's personnel provide landing points at the RTU junction box for the new control wiring?

The Owner will land wires in the RTU cabinet; the Contractor will land wires in the VFDs.

Question 13: Does the Contractor need to provide new equipment for the pump controls?

Yes, two IO cards were specified in the bid docs.

Drawing E3

Question 14: The power panel PP3 single-line diagram indicates a neutral exists for power panel PP3. Also, the wiring description for the modifications would indicate a neutral is being provided between the existing CT cabinet to the transfer switch, the transfer switch to generator receptacle, and the transfer switch to PP3. No ground wire is indicated for these conduit runs. Are they to be provided? (See E1, Note 5). Although it does not read grammatically correct, it would appear that the intent is to provide ground conductors in the feeders as well.

Contractor shall provide ground conductors for the aforementioned conduit runs.

Question 15: The generator receptacle is a 3P 3W device (no neutral). Is the fourth conductor in this feeder intended to be the ground? And if so, what provisions are made for the generator cable and connector which we assume are existing?

See Addendum No.1, Part 2. 480V service is being provided and not 480/277v service. Therefore, the conductors between the generator receptacle and the manual transfer switch shall be 4#4/0. The fourth conductor is for grounding. The generator receptacle model noted on the drawing should reflect a 4P 4W receptacle, in lieu of the



noted 3P unit. Owner will provide a 4-pole receptacle with plug closure cap; it will need a 2.5" conduit for the wiring. The Contractor is to install and wire the Owner's furnished equipment.

Question 16: The power panel PP3 single-line diagram calls for replacing the existing 30A 3P CBs, presently feeding the Booster Pumps, with 40A 3P CBs. The (2) spare 30A CBs indicated in PP3 are actually 40A 3P. Should these be used in lieu of providing new?

Yes, see Addendum No.1, Part 2.

Question 17: Note 5 calls for re-routing the conduits between the CT cabinet and PP3, but they are not as indicated in Detail 1/E3. There are nipples between a wireway to the left of the CT cabinet and enter the back of PP3. They are not re-routable. Are we to extend the wireway under the CT cabinet to the right side and make new penetrations in the wall of the structure? Or are we to provide four nipples between PP3 and the manual transfer for re-routing the service entrance conductors?

Contractor shall provide two new conduits from the existing ITC cabinet to the transfer switch. These conduits will be mounted to the exterior of the tank and will require two new penetrations through the tank wall. Tank penetrations shall be in accordance with Detail 1 on Contract Drawing E3. Existing conductors between the ITC cabinet and the back of panel board PP3 shall be removed. The Contractor shall submit to Loudoun Water for approval, as a Shop Drawing, their proposed plan to bring power from the ITC cabinet to the transfer switch.

Question 18: The RTU junction box one-line diagram indicates (1)-2/C#16TSP between the VFDs and the junction box. The Elementary Control Schematic indicates a requirement for (2), (1) for speed control and (1) for speed status. We assume the Schematic to be correct.

Yes, see Addendum No.1, Part 2 for revised requirement.

PART 2 – CHANGES TO CONTRACT DOCUMENTS

Make the following additions, deletions, or other changes to the Contract Documents.

1. In the Solicitation for Quote

a. Contract Time

REPLACE “The Contractor Shall complete the Work within 120 days”

WITH “The Contractor Shall complete the Work within 150 days”

2. Quote Form

REPLACE “complete PROJECT within 120 days consecutive calendar days”

WITH “complete PROJECT within 150 days consecutive calendar days”

3. Contract Standard Terms and conditions –



a. Contract Period

REPLACE “Contract Time, is defined as 120 days”

WITH “Contract Time, is defined as 150 days”

4. Drawing E-1 Electrical Legend, notes and Site Plan

a. General Electrical Note 6.

REPLACE “All new conduits shall be PVC coated rigid galvanized steel bonded with a 40 ML, (minimum thickness), PVC jacket and coated inside with urethane. All conduit fittings and conduit supports shall be PVC coated and be provided by the same conduit manufacturer.

WITH “All new conduits inside the tank shall be galvanized steel, and all conduits outside the tank shall be rigid steel. All conduit fittings and supports, shall be of the same material as the conduit, and be provided by the same conduit manufacturer.”

b. Maintenance of Facility Operation

Clarification: Contractor shall coordinate a maximum of two (2) - four (4) hour outages with Loudoun Water Operations Staff to allow for the installation of the manual transfer switch. Outages shall be coordinated to eliminate outage times during peak water usage.

Should additional outage time be required, the Contractor shall install the generator receptacle and the manual transfer switch, to power the station from a generator. Loudoun Water will provide the generator for this use. The generator can only be operated for 5 consecutive days, Monday – Friday.

5. Drawing E-2 Electrical Plan

a. Plan:

REPLACE 4’ x 8’ x 1/4” steel backboard at the locations for Manual Transfer Switch and VFD’s

WITH The descriptions shown on Attachment #2.

6. Drawing E-3 Electrical Single-Line Diagrams, Schematics and Details. Plan

a. Power Panel PP3 Single Line Diagram:

REPLACE Spare - 30A #3P breakers

WITH Spare - 40A #3P breakers



Clarification: Utilize the existing 40A#3 breakers and leave the 30 A #3P breakers as spares.

b. Conduit from the Generator Receptacle to the Manual transfer Switch

REPLACE 4 - #4/0, 2" C

WITH 4 - #4/0, 2.5" C

c. RTU Junction Box Booster pump No. 1

REPLACE 1 - 2/C#16TPS, #14G, 1' C

WITH 2 - 2/C#16TPS, #14G, 1' C

d. RTU Junction Box Booster pump No. 2

REPLACE 1 - 2/C#16TPS, #14G, 1' C

WITH 2 - 2/C#16TPS, #14G, 1' C

e. Key Notes: number No. 1.

REPLACE "GENERATOR RECEPTACLE - COPPER CROUSE-HINDS ARKTITE MODEL AREAL20317-S22 PROVIDE COMPLETE RECEPTACLE WITH PLUG CLOSURE CAP"

WITH "OWNER SHALL PROVIDE COMPLETE RECEPTACLE WITH PLUG CLOSURE CAP. CONTRACTOR SHALL PROVIDE WIRING AND INSTALLATION AS SHOW ON DRAWINGS"

PART 3 – ATTACHMENTS

The following items are attached and considered part of this Addendum:

1. Attachment 1 – "Plan Holders list"
2. Attachment 2 – "Pre-Bid Meeting Attendee List"
3. Attachment 3 – "Electrical Equipment Detail"
4. Attachment 4 – "Sheet M2 - 2 of 7"
5. Attachment 5 – "Existing Pump Dimensions"

ACKNOWLEDGEMENT OF ADDENDUM 1

Your acknowledgement of Addendum 1 on the Quote Form is a requirement of RFQ 2011-018-200, Broadlands Water Booster Pumping Station Phase III Upgrade.

This Addendum consists of 14 pages, including cover page, and attachments.

END OF ADDENDUM



**Attachment #1
PLAN HOLDERS LIST**

Firm	Address	Phone #	E-Mail Address	Contact
Ace Services	1002 West Street Laurel, MD 20707	443-367-1620	jim.voltz@aceservinc.com	Jim Voltz, President
PC Construction (FKA Pizzagalli)		540-301-3322	jchaklos@pcconstruction.com	Joe Chaklos
M A Bongiovanni Inc.	P O Box 147-Colvin Station 1400 Jamesville Avenue Syracuse, NY 13205	315-475-9937	mbongiovanni@mabinc.net	
Snyder Environmental Services Inc.	270 Industrial Blvd. Kearneysville, WV 25430	304-725-9140	seswater@frontiernet.net	
Corman Construction Inc.	12001 Guilford Road Annapolis Junction, MD 20701	301-953-0900	bprince@cormanconstruction.com	
Patterson Construction Company Inc.	12315 McClain Street Fredericksburg, VA 22407	540-786-5645	pcc444@aol.com	Jim Patterson
FJ Industrial		540-868-0460	fjindust@yahoo.com	Bob Wanger
WG Construction	9251 Industrial Court Manassas, VA 20109	703-335-5599	bruceg@wgconstruction.com	Bruce Galbrith
Herring Electric Company	45681 Oakbrook Court, #106 Dulles, VA 20166	703-406-3204	bob@heci.org	Bob Nicholas
Systems East, Inc.	30 Basil Sawyer Drive Hampton, VA 23666	800-230-8734	kim@systemseastinc.com	
Division 16, Inc.	P O Box 2076 7015 Strathmore Street Falls Church, VA 22042	703-641-9210	hmains@verizon.net	Harry Mains
PD&C			wdodds@pdandc.com	Will Dodds
EMH Environmental, Inc.	3060 Washington Road, Suite 190, Glenwood, MD 21738	410-489-9630	emh@emhenviro.com	Ed Halley
Sherwood-Logan and Associates	2140 Renard Court Annapolis, MD 21401	410-841-6810	fairweather.r@sherwoodlogan.com	Bob Fairweather
Hydro Tec Inc.	9319 Cool Spring Road Mechanicsville, VA 23116	804-412-2262	twalker@hydrotecinc.com	Todd Walker
iSqFt	5542 Nicholson Lane Rockville, MD 20852	P: 800-364-2059	kfurlow@ISQFT.com	Kevin Furlow
Bid Ocean, Inc.	PO Box 40445 Grand Junction, CO 81504 - USA		bids@bidocean.com	

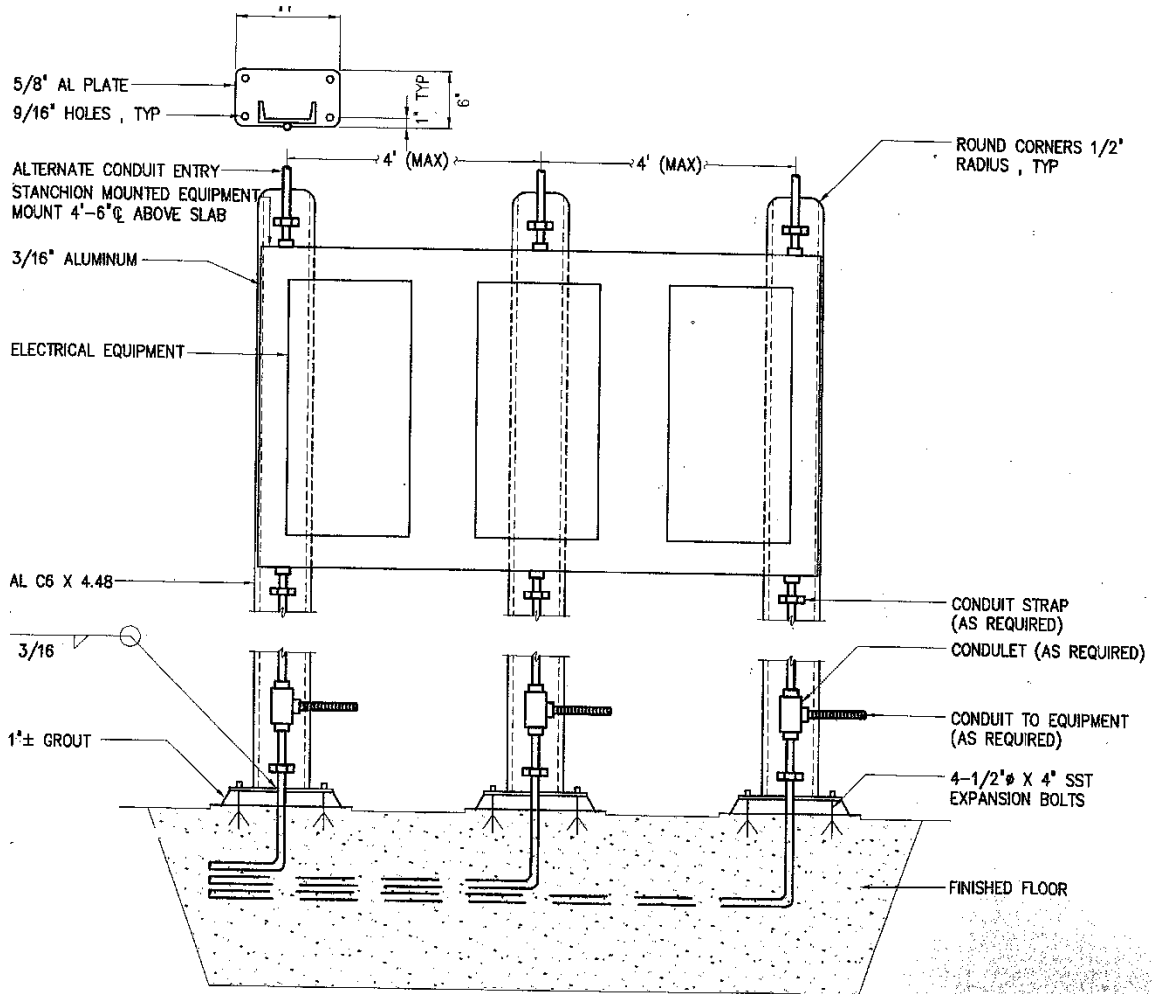
Attachment #2

LOUDOWN WATER
 BROADLANDS WATER BOOSTER PUMP STATION PHASE III UPGRADE
 Pre-Bid Meeting for Request for Quotes
 RFQ 2011 018 200
 Attendance Sheet
 January 5, 2012

Loudown Water Project No. 20070164

Name	Organization	Phone Number	Email Address
Jack Jadyev	Loudown Water	571-291-7975	jjadyev@loudownwater.org
Rick Bennett	W.C. SUTHERLAND	703-335-5551	Rick.Bennett@wcsut.com
Jordan Bennett	W.C. SUTHERLAND	703-335-5574	Jordan.Bennett@wcsut.com
Robert Williams	Hydronic LLC	728-466-3204	bob@hcc.com
Karl Wollweber	Flindas Inc	541-808-0900	kflindas@yahoo.com
Eric Siv	EMH ENVIRONMENTAL	410-484-9630	EMH@EMHENVIRE.COM

Attachment #3

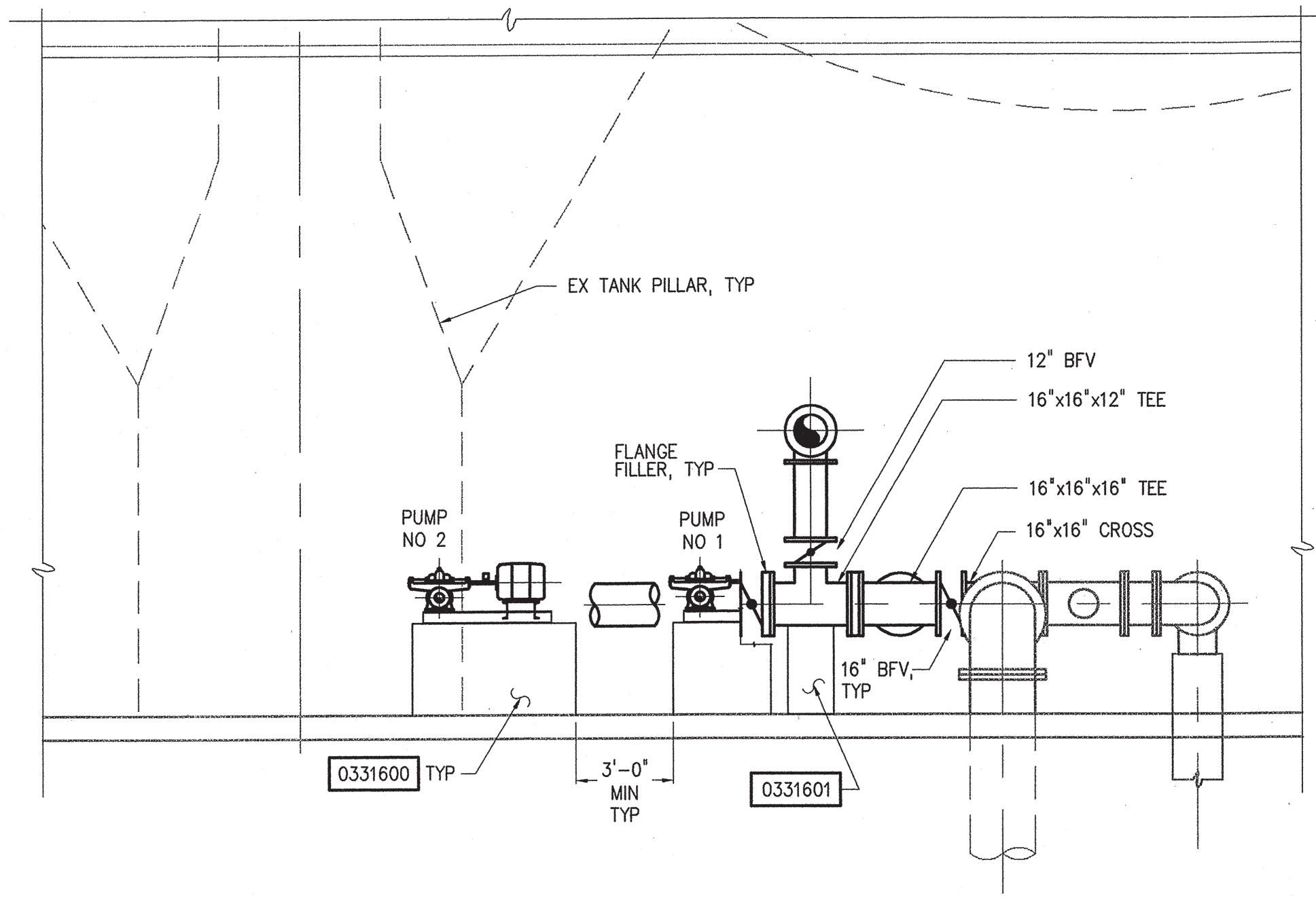


ELECTRICAL EQUIPMENT RACK DETAIL

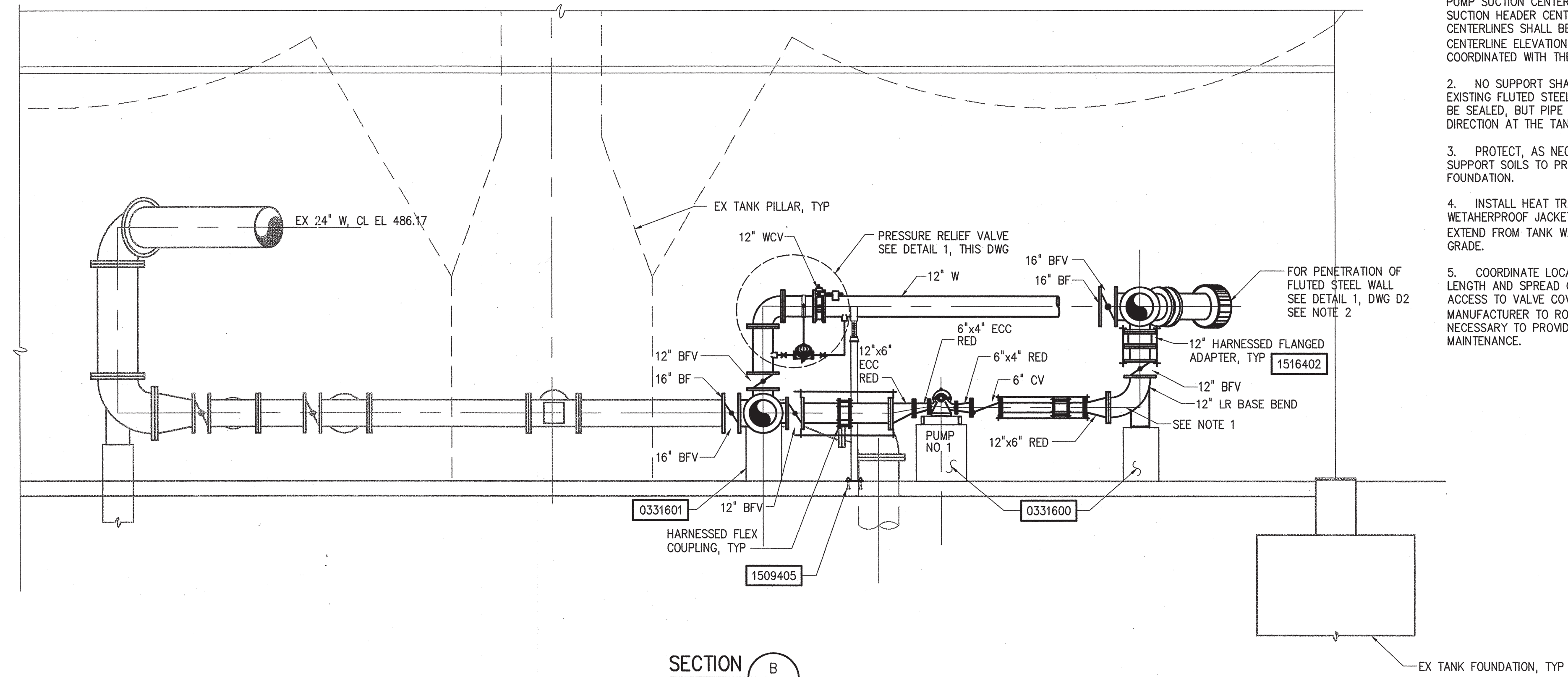
NO SCALE

NOTES:

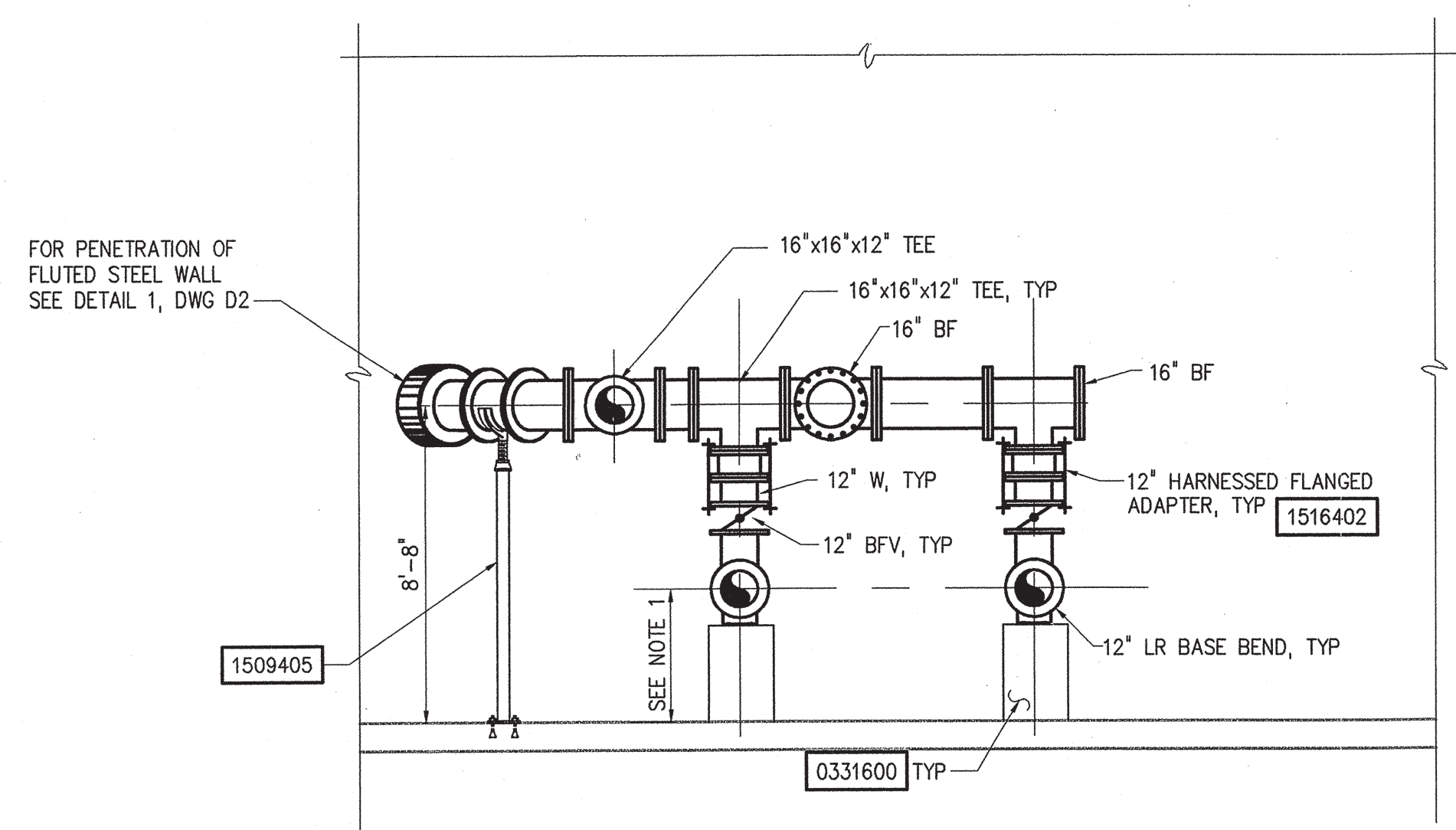
1. CENTERLINE OF SUCTION HEADER SHALL BE THE CENTERLINE ELEVATION OF THE EXISTING MAGMETER RUN. SUCTION AND DISCHARGE ELEVATIONS OF THE PUMPS SHALL BE COORDINATED WITH THE PUMP MANUFACTURER. PUMP SUCTION CENTERLINE SHALL BE SET BASED ON THE SUCTION HEADER CENTERLINE. PUMP DISCHARGE CENTERLINES SHALL BE BASED ON THE APPROVED PUMP. CENTERLINE ELEVATION OF THE 12" BASE BENDS SHALL BE COORDINATED WITH THE PUMP DISCHARGE ELEVATION.
2. NO SUPPORT SHALL BE PROVIDED FOR PIPE AT EXISTING FLUTED STEEL TANK WALL. PENETRATION SHALL BE SEALED, BUT PIPE SHALL NOT BE RESTRAINED IN ANY DIRECTION AT THE TANK WALL.
3. PROTECT, AS NECESSARY, EXISTING TANK FOUNDATION SUPPORT SOILS TO PREVENT UNDERMINING OF EXISTING FOUNDATION.
4. INSTALL HEAT TRACING, INSULATION AND WEATHERPROOF JACKET ON EXPOSED EXTERIOR PIPING. EXTEND FROM TANK WALL TO 3'-6" MINIMUM BELOW GRADE.
5. COORDINATE LOCATION OF WELD-ON BOSSES WITH LENGTH AND SPREAD OF SUPPORT RODS TO PROVIDE ACCESS TO VALVE COVER. COORDINATE WITH VALVE MANUFACTURER TO ROTATE VALVE COVER (AS SHOWN) IF NECESSARY TO PROVIDE ACCESS TO VALVE FOR MAINTENANCE.



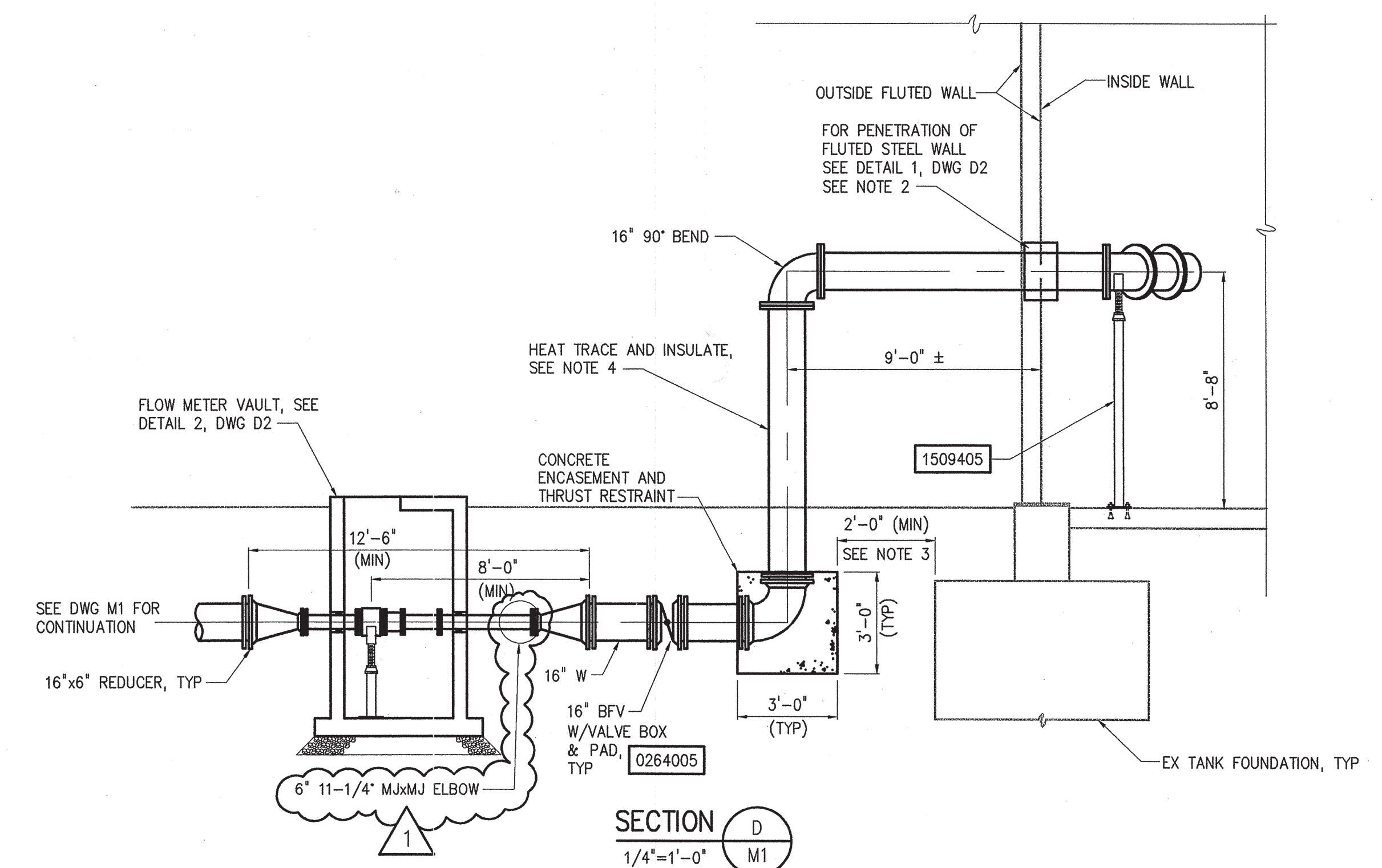
SECTION A
1/4"=1'-0" M1



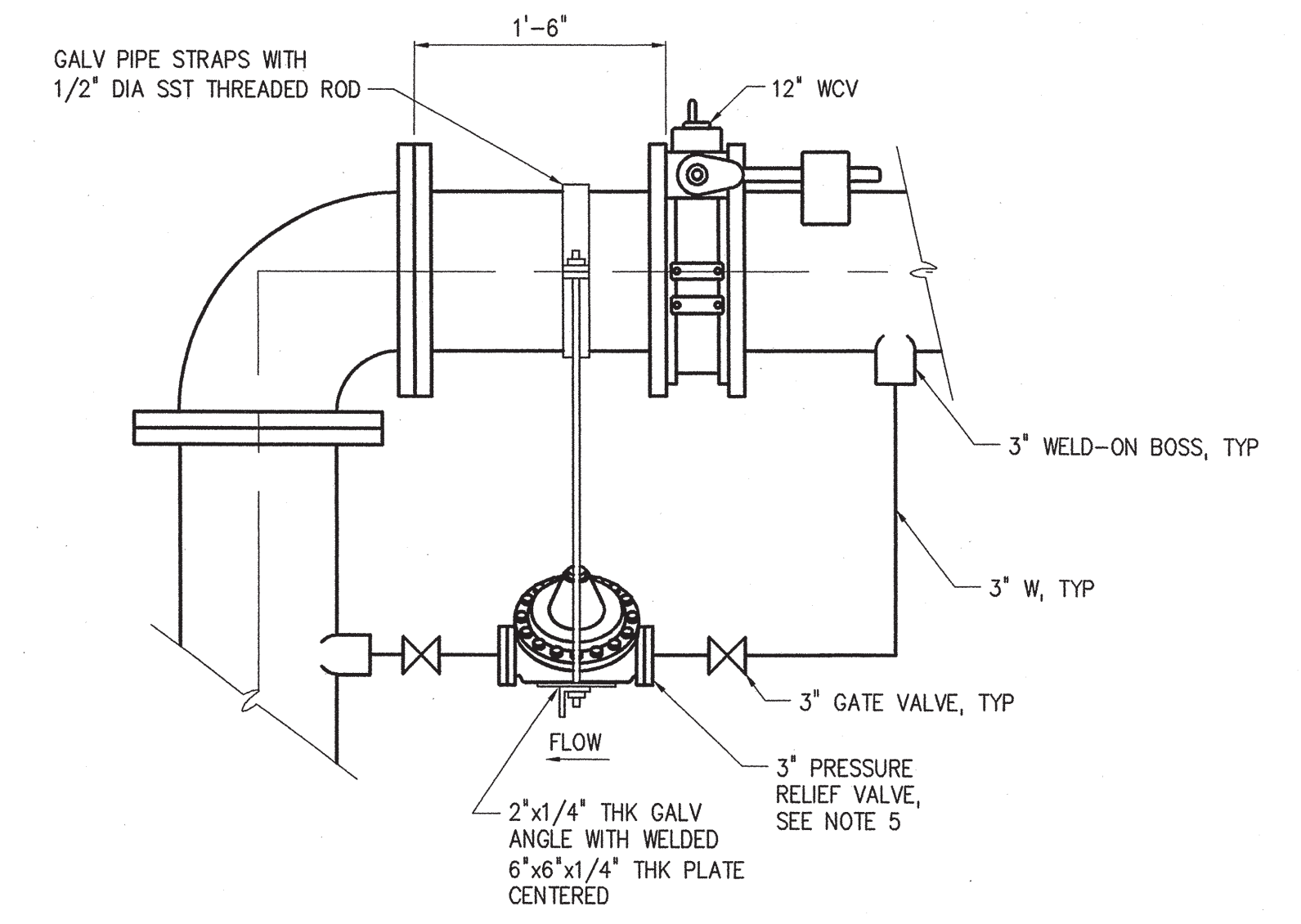
SECTION B
1/4"=1'-0" M1



SECTION C
1/4"=1'-0" M1



SECTION D
1/4"=1'-0" M1

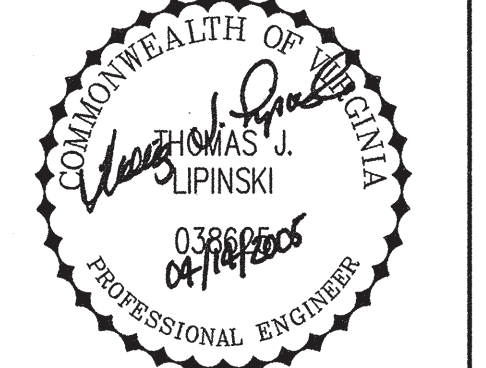


PRESSURE RELIEF VALVE
DETAIL 1
NTS M2

DESIGNED	CAS
DRAWN	CAS
CHECKED	
PROJ. ENGR.	ELH
NO.	1
ISSUED FOR	RECORD DRAWINGS
DATE	APR 05
BY	
APPROVED	

THIS DOCUMENT ORIGINALLY ISSUED FOR CONSTRUCTION AND SEALED BY BRUCE W. PIERSTORFF SEAL NUMBER 024957. THIS MEDIA HAS BEEN MODIFIED TO REFLECT FIELD CHANGES IDENTIFIED BY THE CONTRACTOR AND SHALL NOT BE CONSIDERED A CERTIFIED DOCUMENT

THIS DOCUMENT ORIGINALLY ISSUED FOR CONSTRUCTION AND SEALED BY KEVIN C. WOOD SEAL NUMBER 18697. THIS MEDIA HAS BEEN MODIFIED TO REFLECT FIELD CHANGES IDENTIFIED BY THE CONTRACTOR AND SHALL NOT BE CONSIDERED A CERTIFIED DOCUMENT



HAZEN AND SAWYER
Environmental Engineers & Scientists
11242 WAPLES MILL ROAD
FAIRFAX, VA. 22030

LOUDOUN COUNTY SANITATION AUTHORITY
LEESBURG, VIRGINIA
**BROADLANDS WATER BOOSTER PUMP STATION
PHASE II**

MECHANICAL
SECTIONS

THE SCALE BAR SHOWN BELOW MEASURES ONE INCH LONG ON THE ORIGINAL DRAWING.	DATE: SEPTEMBER 2003
	H & S JOB NUMBER 30629
	CONTRACT NUMBER W-148
	DRAWING NUMBER M2
	SHEET 2 OF 7

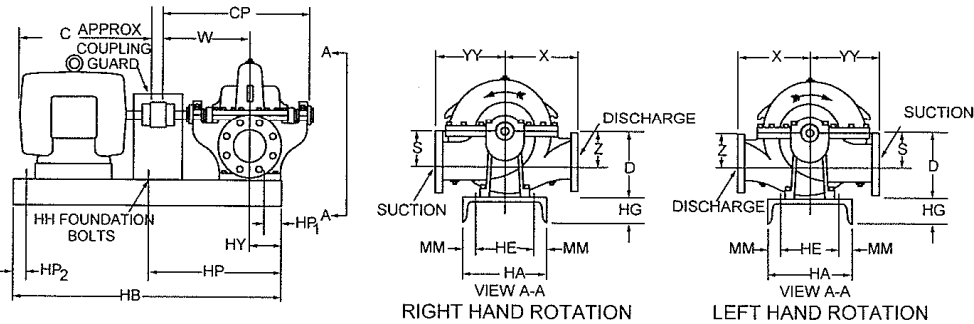
RECORD DRAWING

Attachment #5 Existing Pump Dimensions

Company Name: AMES, Inc.
Project Name: Broadlands W.B.P.S.
Author Name: Keith Slemp
Date Created:



Single Stage Horizontal Split Case-411



Units of Measurement: Inches

DISC. SIZE	SUCT SIZE	SERIES	S	W	X	Z	CP	HY	YY	MM	D	C	HA	HB	HE	HG	HH QTY
2.5	3.0	2	4.5	13.5	11.0	4.5	24.0	5.0	11.5	1.5	10.0	18.0	12.0	38.0	9.0	3.0	4

HH SIZE	HP	HP1	HP2
0.5		20.0	1.0

Pump Type: 410-HSC	Pump Size: 2-1/2x3x12
Pump Speed: 1800 RPM	Pump Weight Only: 260.0 lbs
Frame Size: 215T	Power Frame: N/A
Cover Size:	Frequency: 60 HZ
Coupling: Standard	Pump Flange: Standard 125 lb
Base Plate: Standard Steel Bent Form	Discharge Position: Standard # 01
Enclosure: Totally Enclosed Fan Cooled	Rotation: (Undetermined)
Voltage/Phase: 3 PH 230/460	HorsePower: 10

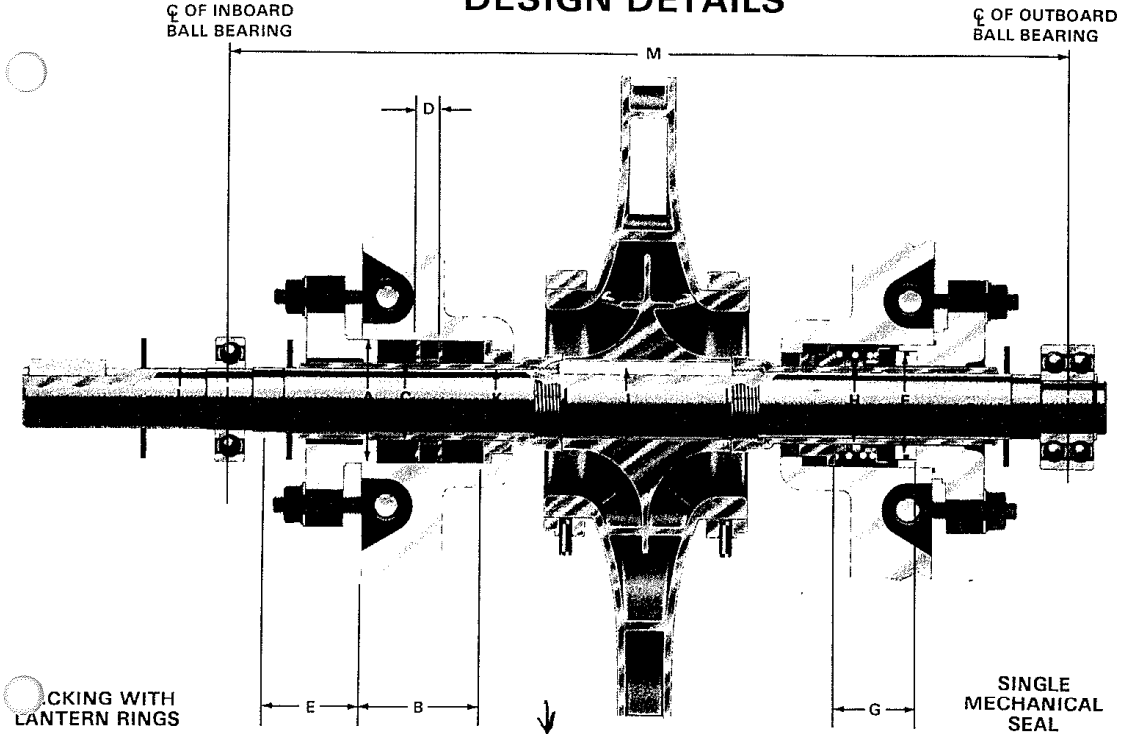
Drawing Notes:

1. ALL DIMENSIONS ARE IN INCHES OR METRIC (MILLIMETERS).
2. DIMENSIONS MAY VARY $\pm 3/8$ (10 mm).
3. NOT FOR CONSTRUCTION PURPOSES UNLESS CERTIFIED.
4. CONDUIT BOX IS SHOWN IN APPROXIMATE LOCATION. CAPACITOR, WHEN FURNISHED, NORMALLY APPEARS ON TOP OF MOTOR.
DIMENSIONS ARE NOT SPECIFIED AS THEY VARY WITH EACH MOTOR MANUFACTURER.
5. SUCTION AND DISCHARGE FLANGES - ANSI FLAT FACE.
6. COUPLING GAP MAY VARY 1/8 TO 2 1/16 INCH (3 to 52 mm).
7. ** DIMENSION "D" IS 10 1/2 (267 mm) WHEN USING FRAMES 324TS THRU 365TS.
8. MOTORS WITH 125 HP (93.213 KW) AND ABOVE WILL BE 460V (60 HZ) OR 380V (50 HZ) ONLY.
9. INFORMATION CONTAINED HEREIN IS CONFIDENTIAL; IT IS THE PROPERTY OF PENTAIR PUMP GROUP; IT IS TO BE USED SOLELY FOR THE PURPOSE PROVIDED, AND IT IS NOT TO BE DISCLOSED TO OTHERS FOR OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT

Attachment #5

SECTION 410 PAGE 74
DATED JANUARY 1982

410 SERIES ENGINEERING DATA DESIGN DETAILS



PUMP PART	DIMENSION	POWER SERIES 1	POWER SERIES 2	POWER SERIES 3	POWER SERIES 4	POWER SERIES 5	POWER SERIES 6B	POWER SERIES 7	
STUFFING BOX	PACKING	A Stuffing Box Bore Diameter	2-1/16	2-7/16	2-13/16	3-1/16	3-7/16	3-11/16	3-15/16
		B Stuffing Box Depth	2-3/8	3-1/8	3	3-1/2	3-3/4	3-3/4	3-7/8
		C Outside Dia., Sleeve for Packing	1-1/8	1-1/2	1-3/4	2	2-3/8	2-1/2	2-7/8
		— No. of Packing Rings without Lantern Ring	10	12	10	12	12	12	14
		— Total number of Packing Rings with Lantern Ring	8	10	8	10	10	10	12
		— No. of Rings in front of Lantern Ring	1	2	2	2	2	2	3
		— Packing Size	7/16 Sq.	7/16 Sq.	1/2 Sq.	1/2 Sq.	1/2 Sq.	9/16x1/2	1/2 Sq.
		D Width of Lantern Ring	1/2	5/8	5/8	5/8	3/4	3/4	3/4
		E Distance from Box to Nearest Obstruction	1-1/4	1-5/8	1-11/16	1-11/16	2	2-3/8	2-1/2
		M. SEAL	F Dia. of Mechanical Seal Seat	1-3/4	2-1/8	2-1/2	2-3/4	2-1/4	3-3/8
G Length of Mechanical Seal	1-3/4		1-9/16	1-7/8	2	2-3/8	2-3/8	2-7/8	
H Outside Dia., sleeve for Mech. Seal	1-7/8		1-1/2	1-3/4	2	2-3/8	2-1/2	2-7/8	
SHAFT	J Dia. at Impeller (Max. Shaft Dia.)	1-1/8	1-3/8	1-5/8	1-7/8	2-1/8	2-3/8	2-3/4	
	K Diameter at Shaft Sleeve	7/8	1-1/4	1-1/2	1-3/4	2	2-1/4	2-5/8	
	L Diameter at Coupling End	3/4	1-1/8	1-3/8	1-1/2	1-3/4	2-1/8	2-1/2	
	— Max. deflection at Sealing Face	.002	.002	.002	.002	.002	.002	.002	
BALL BEARINGS	— Ball Bearing No. (Inboard Radial)	204	206	207	208 †	309	211	213	
	— Ball Bearing No. (Outboard Thrust)	5303	5305	5306	5307	5309	5211	5213	
	M Bearing Centers	14-3/4	18-3/8	19-3/8	21-1/4	24	28-3/8	33-1/8	
	— Minimum Life of Bearing under worst conditions of load (*)	6 YEARS	6 YEARS	6 YEARS	6 YEARS	6 YEARS	6 YEARS	6 YEARS	

Average life of bearing is 5 times minimum life.

†5208 is provided as standard on 5 x 6 x 11B when operating at 3500 R.P.M. only.

GS AURORA PUMP
A UNIT OF GENERAL SIGNAL
800 AIRPORT ROAD • NORTH AURORA, ILLINOIS 60542

Attachment #5

Materials of Construction

PUMP PART	CONSTRUCTION
CASING	CAST IRON ASTM A48
CASING WEAR RING	STAINLESS STEEL (416)
IMPELLER	BRONZE ASTM B584
IMPELLER WEAR RING	BRONZE ASTM B62
SHAFT	STEEL AISI C1045
SHAFT SLEEVE	STAINLESS STEEL (416)
GLAND	BRONZE
PACKING	INTERWOVEN GRAFITE IMPREGNATED ACRYLIC
LANTERN RING	BRONZE ASTM B62